



SEQUENCE LISTING

<110> Waldman, Scott A.
Pearlman, Joshua M.
Barber, Michael T.
Schulz, Stephanie
Parkinson, Scott J.

<120> Compositions that Specifically Bind to Colorectal Cancer Cells
and Methods of Using the Same

<130> 08321-0152 CT1 (TJU0007-103)

<140> 10/656,895
<141> 2003-09-05

<150> US 09/649,697
<151> 2000-08-28

<150> US 08/908,643
<151> 1997-08-07

<160> 82

<170> PatentIn version 3.3

<210> 1
<211> 1636
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 1
gggcacaagg agtatgggtc taacgtgatt ggggtcatga agacgttgct gttggacttg
60

gctttgtggt cactgctctt ccatcccggtg tggtgtcct ttagttccca ggcctaaatg
120

tgactgtgaa cgctactttc atgtattcgg atggtctgat tcataactca ggcgactgcc
180

ggagtagcac ctgtgaaggc ctcgacctac tcaggaaaat ttcaaattgca caacggatgg
240

gctgtgtcct catagggccc tcatgtacat actccacctt ccagatgtac cttgacacag
300

aattgagcta ccccatgata tcagctggaa gttttggatt gtcatgtgac tataaagaaa
360

ccttaaccag gctgatgtct ccagctagaa agttgatata cttcttggtt aacttttggg
420

aaaccaacga tctgcccttc aaaacttatt cctggagcac ttcgtatggt tacaagaatg
480

gtacagaaac tgagggactg tttctggtac cttaatgctc tggaggctag cgtttcctat
540

ttctcccacg aactcggctt taaggtggtg ttaagacaag ataaggagtt tcaggatata
600

ttaatggacc acaacaggaa aagcaatgtg attattatgt gtggtggtcc agagttcctc
660

tacaagctga agggtgaccg agcagtggct gaagacattg tcattattct agtggatctt
720

ttcaatgacc agtacttgga ggacaatgtc acagcccctg actatatgaa aaatgtcctt
780

gttctgacgc tgtctcctgg ggaattccct tctaaatagc tctttctcca ggaatctatc
840

accaacaaaa cgagactttg ctcttgccata tttgaatgga atcctgctct ttggacatat
900

gctgaagata tttcttgaaa atggagaaaa tattaccacc cccaaatttg ctcatgcttt
960

caggaatctc acttttgaag ggtatgacgg tccagtgacc ttgggatgac tgggggggatg
1020

ttgacagtac catggtgctt ccgttatacc ctctgtggac accaagaaat acaaggttct
1080

ttggacctat gataccacg ttaataagaa ctatcctgtg gatatgagcc ccacattcac
1140

ttggaagaac tctaaacttc ctaatgatat tacaggccgg ggcctcaga tcctgatgat
1200

tgcagtcttc accctcactg gagctgtggt gctgctcctg ctcgctcgtc tcctgatgct
1260

cagaaaatat agaaaagatt atgaacttcg tcagaaaaaa tgggtcccaca ttctctctga
1320

aaatatcttt cctctggaga ccaatgagac caatcatggt agcctcaaga tcgatgatga
1380

caaaagacga gatacaatcc agagactacg acagtgcaaa tacgacaaaa agcgagtgat
1440

tctcaaagat ctcaagcaca atgatggtaa tttcactgaa aacagaaga tagaattgaa
1500

caagttgctt cagaaagact attacaacct gaccaagttc tacggcacag tgaaacttga
1560

taccatgatc ttcggggtga tagaatactg tgagagagga tcccctccgg gaagttttaa
1620

atgacacaat ttccta
1636

<210> 2
<211> 78
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 2
atgaagacgt tgctgttgga cttggctttg tggtcactgc tcttccatcc cgggtggctg
60

tccttttagtt cccaggcc
78

<210> 3
<211> 26

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 3

Met Lys Thr Leu Leu Leu Asp Leu Ala Leu Trp Ser Leu Leu Phe His
1 5 10 15

Pro Gly Trp Leu Ser Phe Ser Ser Gln Ala
20 25

<210> 4
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 4
atgtattcgg atggtctgat tcataactca ggcgactgcc ggagtagcac ctgtgaaggc
60

ctcgacctac tcaggaaaat ttcaaataca caacggatgg gctgtgtcct catagggccc
120

tcattgtacat actccacctt ccagatgtac cttgacacag aattgagcta ccccatgata
180

tcagctggaa gttttggatt gtcattgtgac tataaagaaa ccttaaccag gctgatgtct
240

ccagctgaga agttgatata cttcttggtt aactttttgga aaaccaacga tctgcccttc
300

aaaacttatt cctggagcac ttcgtatgtt tacaagaatg gtacagaaac tgaggggactg
360

tttctggtac ct
372

<210> 5
 <211> 124
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 5

Met Tyr Ser Asp Gly Leu Ile His Asn Ser Gly Asp Cys Arg Ser Ser
 1 5 10 15

Thr Cys Glu Gly Leu Asp Leu Leu Arg Lys Ile Ser Asn Ala Gln Arg
 20 25 30

Met Gly Cys Val Leu Ile Gly Pro Ser Cys Thr Tyr Ser Thr Phe Gln
 35 40 45

Met Tyr Leu Asp Thr Glu Leu Ser Tyr Pro Met Ile Ser Ala Gly Ser
 50 55 60

Phe Gly Leu Ser Cys Asp Tyr Lys Glu Thr Leu Thr Arg Leu Met Ser
 65 70 75 80

Pro Ala Arg Lys Leu Ile Tyr Phe Leu Val Asn Phe Trp Lys Thr Asn
 85 90 95

Asp Leu Pro Phe Lys Thr Tyr Ser Trp Ser Thr Ser Tyr Val Tyr Lys
 100 105 110

Asn Gly Thr Glu Thr Glu Gly Leu Phe Leu Val Pro
 115 120

<210> 6
 <211> 276
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 6

atgggctgtg tcctcatagg gccctcatgt acatactcca ccttccagat gtaccttgac
60

acagaattga gctaccccat gatctcagct ggaagttttg gattgtcatg tgactataaa
120

gaaaccttaa ccaggctgat gtctccagct agaaagttga tatacttctt ggtaacttt
180

tggaaaacca acgatctgcc cttcaaaact tattcctgga gcacttcgta tgtttacaag
240

aatggtacag aaactgaggg actgtttctg gtacct
276

<210> 7

<211> 92

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 7

Met	Gly	Cys	Val	Leu	Ile	Gly	Pro	Ser	Cys	Thr	Tyr	Ser	Thr	Phe	Gln
1				5					10					15	

Met	Tyr	Leu	Asp	Thr	Glu	Leu	Ser	Tyr	Pro	Met	Ile	Ser	Ala	Gly	Ser
			20					25					30		

Phe	Gly	Leu	Ser	Cys	Asp	Tyr	Lys	Glu	Thr	Leu	Thr	Arg	Leu	Met	Ser
		35					40					45			

Pro	Ala	Arg	Lys	Leu	Ile	Tyr	Phe	Leu	Val	Asn	Phe	Trp	Lys	Thr	Asn
	50					55					60				

Asp Leu Pro Phe Lys Thr Tyr Ser Trp Ser Thr Ser Tyr Val Tyr Lys
65 70 75 80

Asn Gly Thr Glu Thr Glu Gly Leu Phe Leu Val Pro
85 90

<210> 8
<211> 228
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 8
atgtaccttg acacagaatt gagctacccc atgatctcag ctggaagttt tggattgtca
60

tgtgactata aagaaacctt aaccaggctg atgtctccag ctagaaagtt gatatacttc
120

ttggttaact tttggaaaac caacgatctg cccttcaaaa cttattcctg gagcacttcg
180

tatgtttaca agaatgggtac agaaactgag ggactgtttc tgggtacct
228

<210> 9
<211> 76
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 9

Met Tyr Leu Asp Thr Glu Leu Ser Tyr Pro Met Ile Ser Ala Gly Ser
1 5 10 15

Phe Gly Leu Ser Cys Asp Tyr Lys Glu Thr Leu Thr Arg Leu Met Ser
20 25 30

Pro Ala Arg Lys Leu Ile Tyr Phe Leu Val Asn Phe Trp Lys Thr Asn
35 40 45

Asp Leu Pro Phe Lys Thr Tyr Ser Trp Ser Thr Ser Tyr Val Tyr Lys
50 55 60

Asn Gly Thr Glu Thr Glu Gly Leu Phe Leu Val Pro
65 70 75

<210> 10
<211> 198
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 10
atgatctcag ctggaagttt tggattgtca tgtgactata aagaaacctt aaccaggctg
60

atgtctccag ctagaaagtt gatatacttc ttggttaact tttggaaaac caacgatctg
120

cccttcaaaa cttattcctg gagcacttcg tatgtttaca agaatgggtac agaaactgag
180

ggactgtttc tggtaacct
198

<210> 11
<211> 66
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 11

Met Ile Ser Ala Gly Ser Phe Gly Leu Ser Cys Asp Tyr Lys Glu Thr
1 5 10 15

Leu Thr Arg Leu Met Ser Pro Ala Arg Lys Leu Ile Tyr Phe Leu Val
20 25 30

Asn Phe Trp Lys Thr Asn Asp Leu Pro Phe Lys Thr Tyr Ser Trp Ser
35 40 45

Thr Ser Tyr Val Tyr Lys Asn Gly Thr Glu Thr Glu Gly Leu Phe Leu
50 55 60

Val Pro
65

<210> 12

<211> 138

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 12

atgtctccag ctagaaagtt gatatacttc ttgggtaact tttggaaaac caacgatctg
60

cccttcaaaa cttattcctg gagcacttcg tatgtttaca agaatgggtac agaaactgag
120

ggactgtttc tggtaacct
138

<210> 13

<211> 46

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 13

Met	Ser	Pro	Ala	Arg	Lys	Leu	Ile	Tyr	Phe	Leu	Val	Asn	Phe	Trp	Lys
1				5					10					15	

Thr	Asn	Asp	Leu	Pro	Phe	Lys	Thr	Tyr	Ser	Trp	Ser	Thr	Ser	Tyr	Val
			20					25					30		

Tyr	Lys	Asn	Gly	Thr	Glu	Thr	Glu	Gly	Leu	Phe	Leu	Val	Pro
		35					40					45	

<210> 14

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 14

atgcacaacg gatgggctgt gtcctca
27

<210> 15

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 15

Met	His	Asn	Gly	Trp	Ala	Val	Ser	Ser
1				5				

<210> 16

<211> 30

<212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic Construct
 <400> 16
 atgtacatac tccaccttcc agatgtacct
 30

<210> 17
 <211> 10
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Synthetic Construct
 <400> 17

Met	Tyr	Ile	Leu	His	Leu	Pro	Asp	Val	Pro
1				5					10

<210> 18
 <211> 351
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic Construct

<400> 18
 atgtttacaa gaatggtaca gaaactgagg gactgtttct ggtaccttaa tgctctggag
 60

gctagcggtt cctattttct ccacgaactc ggctttaagg tgggtgtaag acaagataag
 120

gagtttcagg atatcttaat ggaccacaac aggaaaagca atgtgattat tatgtgtggt
 180

ggtccagagt tcctctacaa gctgaagggt gaccgagcag tggctgaaga cattgtcatt
 240

attctagtgg atcttttcaa tgaccagtac ttggaggaca atgtcacagc ccctgactat
300

atgaaaaatg tccttgttct gacgctgtct cctggggaat tcccttctaa a
351

<210> 19

<211> 117

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 19

Met Phe Thr Arg Met Val Gln Lys Leu Arg Asp Cys Phe Trp Tyr Leu
1 5 10 15

Asn Ala Leu Glu Ala Ser Val Ser Tyr Phe Ser His Glu Leu Gly Phe
20 25 30

Lys Val Val Leu Arg Gln Asp Lys Glu Phe Gln Asp Ile Leu Met Asp
35 40 45

His Asn Arg Lys Ser Asn Val Ile Ile Met Cys Gly Gly Pro Glu Phe
50 55 60

Leu Tyr Lys Leu Lys Gly Asp Arg Ala Val Ala Glu Asp Ile Val Ile
65 70 75 80

Ile Leu Val Asp Leu Phe Asn Asp Gln Tyr Leu Glu Asp Asn Val Thr
85 90 95

Ala Pro Asp Tyr Met Lys Asn Val Leu Val Leu Thr Leu Ser Pro Gly
100 105 110

Glu Phe Pro Ser Lys

115

<210> 20
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 20
atggtacaga aactgaggga ctgtttctgg taccttaatg ctctggaggc tagcgtttcc
60

tattttctccc acgaactcgg ctttaagggtg gtgttaagac aagataagga gtttcaggat
120

atcttaatgg accacaacag gaaaagcaat gtgattatta tgtgtggtgg tccagagttc
180

ctctacaagc tgaaggggtga ccgagcagtg gctgaagaca ttgtcattat tctagtggat
240

cttttcaatg accagtactt ggaggacaat gtcacagccc ctgactatat gaaaaatgtc
300

cttgttctga cgctgtctcc tggggaattc ccttctaaa
339

<210> 21
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 21

Met	Val	Gln	Lys	Leu	Arg	Asp	Cys	Phe	Trp	Tyr	Leu	Asn	Ala	Leu	Glu
1				5					10					15	

Ala Ser Val Ser Tyr Phe Ser His Glu Leu Gly Phe Lys Val Val Leu

20

25

30

Arg Gln Asp Lys Glu Phe Gln Asp Ile Leu Met Asp His Asn Arg Lys
 35 40 45

Ser Asn Val Ile Ile Met Cys Gly Gly Pro Glu Phe Leu Tyr Lys Leu
 50 55 60

Lys Gly Asp Arg Ala Val Ala Glu Asp Ile Val Ile Ile Leu Val Asp
 65 70 75 80

Leu Phe Asn Asp Gln Tyr Leu Glu Asp Asn Val Thr Ala Pro Asp Tyr
 85 90 95

Met Lys Asn Val Leu Val Leu Thr Leu Ser Pro Gly Glu Phe Pro Ser
 100 105 110

Lys

<210> 22
 <211> 213
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 22
 atggaccaca acaggaaaag caatgtgatt attatgtgtg gtggtccaga gttcctctac
 60

aagctgaagg gtgaccgagc agtggctgaa gacattgtca ttattctagt ggatcttttc
 120

aatgaccagt acttggagga caatgtcaca gccctgact atatgaaaaa tgtccttggt
 180

ctgacgctgt ctcctgggga attcccttct aaa

213

<210> 23
<211> 71
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 23

Met Asp His Asn Arg Lys Ser Asn Val Ile Ile Met Cys Gly Gly Pro
1 5 10 15

Glu Phe Leu Tyr Lys Leu Lys Gly Asp Arg Ala Val Ala Glu Asp Ile
20 25 30

Val Ile Ile Leu Val Asp Leu Phe Asn Asp Gln Tyr Leu Glu Asp Asn
35 40 45

Val Thr Ala Pro Asp Tyr Met Lys Asn Val Leu Val Leu Thr Leu Ser
50 55 60

Pro Gly Glu Phe Pro Ser Lys
65 70

<210> 24
<211> 180
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 24

atgtgtggtg gtccagagtt cctctacaag ctgaagggtg accgagcagt ggctgaagac
60

attgtcatta ttctagtgga tcttttcaat gaccagtact tggaggacaa tgtcacagcc

120

cctgactata tgaaaaatgt ccttggttctg acgctgtctc ctggggaatt cccttctaaa
180

<210> 25

<211> 60

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 25

Met	Cys	Gly	Gly	Pro	Glu	Phe	Leu	Tyr	Lys	Leu	Lys	Gly	Asp	Arg	Ala
1				5					10					15	

Val	Ala	Glu	Asp	Ile	Val	Ile	Ile	Leu	Val	Asp	Leu	Phe	Asn	Asp	Gln
			20					25						30	

Tyr	Leu	Glu	Asp	Asn	Val	Thr	Ala	Pro	Asp	Tyr	Met	Lys	Asn	Val	Leu
		35					40					45			

Val	Leu	Thr	Leu	Ser	Pro	Gly	Glu	Phe	Pro	Ser	Lys
	50					55					60

<210> 26

<211> 51

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 26

atgaaaaatg tccttggttct gacgctgtct cctggggaat tcccttctaa a
51

<210> 27

<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 27

Met	Lys	Asn	Val	Leu	Val	Leu	Thr	Leu	Ser	Pro	Gly	Glu	Phe	Pro	Ser
1			5					10						15	

Lys

<210> 28
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 28
atgctctgga ggctagcggt tcctatttct cccacgaact cggctttaag gtggtgt
57

<210> 29
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 29

Met	Leu	Trp	Arg	Leu	Ala	Phe	Pro	Ile	Ser	Pro	Thr	Asn	Ser	Ala	Leu
1				5					10					15	

Arg Trp Cys

<210> 30
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 30
atgaccagta cttggaggac aatgtcacag cccctgacta ta
42

<210> 31
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 31

Met	Thr	Ser	Thr	Trp	Arg	Thr	Met	Ser	Gln	Pro	Leu	Thr	Ile
1				5					10				

<210> 32
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 32
atgtcacagc ccctgactat a
21

<210> 33
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 33

Met Ser Gln Pro Leu Thr Ile
1 5

<210> 34

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 34

atggaatcct gctctttgga catatgc
27

<210> 35

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 35

Met Glu Ser Cys Ser Leu Asp Ile Cys
1 5

<210> 36

<211> 108

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 36

atgctgaaga tatttcttga aaatggagaa aatattacca cccccaaatt tgctcatgct
60

ttcaggaatc tcacttttga aggggatgac ggtccagtga ccttgggga
108

<210> 37
<211> 36
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 37

Met	Leu	Lys	Ile	Phe	Leu	Glu	Asn	Gly	Glu	Asn	Ile	Thr	Thr	Pro	Lys
1				5					10					15	

Phe	Ala	His	Ala	Phe	Arg	Asn	Leu	Thr	Phe	Glu	Gly	Tyr	Asp	Gly	Pro
			20					25						30	

Val	Thr	Leu	Gly
			35

<210> 38
<211> 75
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 38

atggagaaaa tattaccacc cccaaatttg ctcatgcttt caggaatctc acttttgaag
60

ggtatgacgg tccag
75

<210> 39

<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 39

Met Glu Lys Ile Leu Pro Pro Pro Asn Leu Leu Met Leu Ser Gly Ile
1 5 10 15

Ser Leu Leu Lys Gly Met Thr Val Gln
20 25

<210> 40
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 40
atgctttcag gaatctcact tttgaagggt atgacgggcc ag
42

<210> 41
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 41

Met Leu Ser Gly Ile Ser Leu Leu Lys Gly Met Thr Val Gln
1 5 10

<210> 42
<211> 84

<212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 42
 atgactgggg ggatggtgac agtaccatgg tgcttccggt ataccctctg tggacaccaa
 60

gaaatacaag gttcttttga ccta
 84

<210> 43
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 43

Met	Thr	Gly	Gly	Met	Leu	Thr	Val	Pro	Trp	Cys	Phe	Arg	Tyr	Thr	Leu
1				5					10					15	

Cys	Gly	His	Gln	Glu	Ile	Gln	Gly	Ser	Leu	Asp	Leu
			20					25			

<210> 44
 <211> 72
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 44
 atgttgacag taccatgggtg cttccggttat accctctgtg gacaccaaga aatacaaggt
 60

tcttttgacc ta
 72

<210> 45
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 45

Met Leu Thr Val Pro Trp Cys Phe Arg Tyr Thr Leu Cys Gly His Gln
1 5 10 15

Glu Ile Gln Gly Ser Leu Asp Leu
20

<210> 46
<211> 93
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 46
atggtgcttc cggtatcccc tctgtggaca ccaagaaata caaggttctt tggacctatg
60

atacccacgt taataagaac taccctgtgg ata
93

<210> 47
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 47

Met Val Leu Pro Leu Tyr Pro Leu Trp Thr Pro Arg Asn Thr Arg Phe
 1 5 10 15

Phe Gly Pro Met Ile Pro Thr Leu Ile Arg Thr Ile Leu Trp Ile
 20 25 30

<210> 48
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 48
 atgataccca cgtaataag aactatcctg tggata
 36

<210> 49
 <211> 12
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 49

Met Ile Pro Thr Leu Ile Arg Thr Ile Leu Trp Ile
 1 5 10

<210> 50
 <211> 498
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 50
 atgagcccca cattcacttg gaagaactct aaacttccta atgatattac aggccggggc
 60

cctcagatcc tgatgattgc agtcttcacc ctccactggag ctgtgggtgct gctcctgctc
120

gtcgtctctcc tgatgctcag aaaatataga aaagattatg aacttcgtca gaaaaaatgg
180

tcccacattc ctccctgaaaa tatctttcct ctggagacca atgagaccaa tcatgttagc
240

ctcaagatcg atgatgacaa aagacgagat acaatccaga gactacgaca gtgcaaatac
300

gacaaaaagc gagtgattct caaagatctc aagcacaatg atggtaattt cactgaaaaa
360

cagaagatag aattgaacaa gttgcttcag aaagactatt acaacctgac caagttctac
420

ggcacagtga aacttgatac catgatcttc ggggtgatag aatactgtga gagaggatcc
480

cctccgggaa gttttaaa
498

<210> 51
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 51

Met	Ser	Pro	Thr	Phe	Thr	Trp	Lys	Asn	Ser	Lys	Leu	Pro	Asn	Asp	Ile
1				5					10					15	

Thr	Gly	Arg	Gly	Pro	Gln	Ile	Leu	Met	Ile	Ala	Val	Phe	Thr	Leu	Thr
			20					25						30	

Gly	Ala	Val	Val	Leu	Leu	Leu	Leu	Val	Ala	Leu	Leu	Met	Leu	Arg	Lys
		35					40					45			

Tyr Arg Lys Asp Tyr Glu Leu Arg Gln Lys Lys Trp Ser His Ile Pro
50 55 60

Pro Glu Asn Ile Phe Pro Leu Glu Thr Asn Glu Thr Asn His Val Ser
65 70 75 80

Leu Lys Ile Asp Asp Asp Lys Arg Arg Asp Thr Ile Gln Arg Leu Arg
85 90 95

Gln Cys Lys Tyr Asp Lys Lys Arg Val Ile Leu Lys Asp Leu Lys His
100 105 110

Asn Asp Gly Asn Phe Thr Glu Lys Gln Lys Ile Glu Leu Asn Lys Leu
115 120 125

Leu Gln Lys Asp Tyr Tyr Asn Leu Thr Lys Phe Tyr Gly Thr Val Lys
130 135 140

Leu Asp Thr Met Ile Phe Gly Val Ile Glu Tyr Cys Glu Arg Gly Ser
145 150 155 160

Pro Pro Gly Ser Phe Lys
165

<210> 52
<211> 426
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 52
atgattgcag tcttcaccct cactggagct gtggtgctgc tcttgctcgt cgctctcctg
60

atgctcagaa aatatagaaa agattatgaa cttcgtcaga aaaaatgggc ccacattcct
120

cctgaaaata tctttcctct ggagaccaat gagaccaatc atgttagcct caagatcgat
180

gatgacaaaa gacgagatac aatccagaga ctacgacagt gcaaatacga caaaaagcga
240

gtgattctca aagatctcaa gcacaatgat ggtaatttca ctgaaaaaca gaagatagaa
300

ttgaacaagt tgcttcagaa agactattac aacctgacca agttctacgg cacagtgaaa
360

cttgatacca tgatcttcgg ggtgatagaa tactgtgaga gaggatcccc tccgggaagt
420

tttaaa
426

<210> 53
<211> 142
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 53

Met Ile Ala Val Phe Thr Leu Thr Gly Ala Val Val Leu Leu Leu Leu
1 5 10 15

Val Ala Leu Leu Met Leu Arg Lys Tyr Arg Lys Asp Tyr Glu Leu Arg
20 25 30

Gln Lys Lys Trp Ser His Ile Pro Pro Glu Asn Ile Phe Pro Leu Glu
35 40 45

Thr Asn Glu Thr Asn His Val Ser Leu Lys Ile Asp Asp Asp Lys Arg
50 55 60

Arg Asp Thr Ile Gln Arg Leu Arg Gln Cys Lys Tyr Asp Lys Lys Arg
 65 70 75 80

Val Ile Leu Lys Asp Leu Lys His Asn Asp Gly Asn Phe Thr Glu Lys
 85 90 95

Gln Lys Ile Glu Leu Asn Lys Leu Leu Gln Lys Asp Tyr Tyr Asn Leu
 100 105 110

Thr Lys Phe Tyr Gly Thr Val Lys Leu Asp Thr Met Ile Phe Gly Val
 115 120 125

Ile Glu Tyr Cys Glu Arg Gly Ser Pro Pro Gly Ser Phe Lys
 130 135 140

<210> 54
 <211> 366
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 54
 atgctcagaa aatatagaaa agattatgaa cttcgtcaga aaaaatggtc ccacattcct
 60

cctgaaaata tctttcctct ggagaccaat gagaccaatc atgttagcct caagatcgat
 120

gatgacaaaa gacgagatac aatccagaga ctacgacagt gcaaatacga caaaaagcga
 180

gtgattctca aagatctcaa gcacaatgat ggtaatttca ctgaaaaaca gaagatagaa
 240

ttgaacaagt tgcttcagaa agactattac aacctgacca agttctacgg cacagtgaaa
 300

cttgatacca tgatcttcgg ggtgatagaa tactgtgaga gaggatcccc tccgggaagt
360

tttaaa
366

<210> 55
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 55

Met Leu Arg Lys Tyr Arg Lys Asp Tyr Glu Leu Arg Gln Lys Lys Trp
1 5 10 15

Ser His Ile Pro Pro Glu Asn Ile Phe Pro Leu Glu Thr Asn Glu Thr
20 25 30

Asn His Val Ser Leu Lys Ile Asp Asp Asp Lys Arg Arg Asp Thr Ile
35 40 45

Gln Arg Leu Arg Gln Cys Lys Tyr Asp Lys Lys Arg Val Ile Leu Lys
50 55 60

Asp Leu Lys His Asn Asp Gly Asn Phe Thr Glu Lys Gln Lys Ile Glu
65 70 75 80

Leu Asn Lys Leu Leu Gln Lys Asp Tyr Tyr Asn Leu Thr Lys Phe Tyr
85 90 95

Gly Thr Val Lys Leu Asp Thr Met Ile Phe Gly Val Ile Glu Tyr Cys
100 105 110

Glu Arg Gly Ser Pro Pro Gly Ser Phe Lys

115

120

<210> 56
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 56
atgatcttcg gggatgata atactgtgag agaggatccc ctccgggaag ttttaaa
57

<210> 57
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 57

Met	Ile	Phe	Gly	Val	Ile	Glu	Tyr	Cys	Glu	Arg	Gly	Ser	Pro	Pro	Gly
1				5					10					15	

Ser Phe Lys

<210> 58
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 58
atgatattac aggccggggc cctcagatcc
30

<210> 59
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 59

Met Ile Leu Gln Ala Gly Ala Leu Arg Ser
1 5 10

<210> 60
<211> 156
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 60

atgaacttcg tcagaaaaaa tgggtcccaca ttctctctga aaatatcttt cctctggaga
60

ccaatgagac caatcatgtt agcctcaaga tcgatgatga caaaagacga gatacaatcc
120

agagactacg acagtgcaaa tacgacaaaa agcgag
156

<210> 61
<211> 52
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 61

Met Asn Phe Val Arg Lys Asn Gly Pro Thr Phe Leu Leu Lys Ile Ser
1 5 10 15

Phe Leu Trp Arg Pro Met Arg Pro Ile Met Leu Ala Ser Arg Ser Met
20 25 30

Met Thr Lys Asp Glu Ile Gln Ser Arg Asp Tyr Asp Ser Ala Asn Thr
35 40 45

Thr Lys Ser Glu
50

<210> 62
<211> 93
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 62
atgagaccaa tcattgttagc ctcaagatcg atgatgacaa aagacgagat acaatccaga
60

gactacgaca gtgcaaatac gacaaaaagc gag
93

<210> 63
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 63

Met Arg Pro Ile Met Leu Ala Ser Arg Ser Met Met Thr Lys Asp Glu
1 5 10 15

Ile Gln Ser Arg Asp Tyr Asp Ser Ala Asn Thr Thr Lys Ser Glu
20 25 30

<210> 64
<211> 81
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 64
atggttagcct caagatcgat gatgacaaaa gacgagatac aatccagaga ctacgacagt
60

gcaaatacga caaaaagcga g
81

<210> 65
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 65

Met	Leu	Ala	Ser	Arg	Ser	Met	Met	Thr	Lys	Asp	Glu	Ile	Gln	Ser	Arg
1				5					10					15	

Asp	Tyr	Asp	Ser	Ala	Asn	Thr	Thr	Lys	Ser	Glu
			20					25		

<210> 66
<211> 63
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 66
atgatgacaa aagacgagat acaatccaga gactacgaca gtgcaaatac gacaaaaagc

60

gag
63

<210> 67
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 67

Met	Met	Thr	Lys	Asp	Glu	Ile	Gln	Ser	Arg	Asp	Tyr	Asp	Ser	Ala	Asn
1				5					10					15	

Thr	Thr	Lys	Ser	Glu
				20

<210> 68
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 68

atgacaaaag acgagataca atccagagac tacgacagtg caaatacgac aaaaagcgag
60

<210> 69
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 69

Met Thr Lys Asp Glu Ile Gln Ser Arg Asp Tyr Asp Ser Ala Asn Thr
1 5 10 15

Thr Lys Ser Glu
20

<210> 70
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 70
atggtcccac attcctcc
18

<210> 71
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 71

Met Val Pro His Ser Ser
1 5

<210> 72
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 72
atgatggtaa tttcactgaa aaacagaaga

30

<210> 73
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 73

Met	Met	Val	Ile	Ser	Leu	Lys	Asn	Arg	Arg
1				5					10

<210> 74
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 74
atggtaattt cactgaaaaa cagaaga
27

<210> 75
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 75

Met	Val	Ile	Ser	Leu	Lys	Asn	Arg	Arg
1				5				

<210> 76
<211> 42

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic Construct

 <400> 76
 atggcggccg ggagcatgcg acgtcggccc attcgcccta ta
 42

<210> 77
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 77

Met	Ala	Ala	Gly	Ser	Met	Arg	Arg	Arg	Pro	Ile	Arg	Pro	Ile
1				5						10			

<210> 78
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 78
 atgcgacgtc ggcccattcg ccctata
 27

<210> 79
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 79

Met Arg Arg Arg Pro Ile Arg Pro Ile
1 5

<210> 80

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 80

atgacacaat ttcct
15

<210> 81

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 81

Met Thr Gln Phe Pro
1 5

<210> 82

<211> 3787

<212> DNA

<213> Homo sapiens

<400> 82

tggagtgggc tgagggactc cactagaggc tgtccatctg gattccctgc ctccctagga
60

gcccaacaga gcaaagcaag tgggcacaag gagtatgggtt ctaacgtgat tgggggtcatg
120

aagacgttgc tgttggactt ggctttgtgg tcaactgctct tccagcccgg gtggctgtcc

180

tttagttccc aggtgagtca gaactgccac aatggcagct atgaaatcag cgtcctgatg
240

atgggcaact cagcctttgc agagcccctg aaaaacttgg aagatgcggt gaatgagggg
300

ctggaaatag tgagaggacg tctgcaaaat gctggcctaa atgtgactgt gaacgctact
360

ttcatgtatt cggatgggtct gattcataac tcaggcgact gccggagtag cacctgtgaa
420

ggcctcgacc tactcaggaa aatttcaaata gcacaacgga tgggctgtgt cctcataggg
480

ccctcatgta catactccac cttccagatg taccttgaca cagaattgag ctaccccatg
540

atctcagctg gaagttttgg attgtcatgt gactataaag aaaccttaac caggctgatg
600

tctccagcta gaaagttgat gtacttcttg gtttaactttt ggaaaaccaa cgatctgccc
660

ttcaaaaactt attcctggag cacttcgtat gtttacaaga atggtacaga aactgaggac
720

tgtttctggg accttaatgc tctggaggct agcgtttcct atttctccca cgaactcggc
780

tttaagggtg tgtaagaca agataaggag tttcaggata tcttaatgga ccacaacagg
840

aaaagcaatg tgattattat gtgtgggtgg ccagagttcc tctacaagct gaagggtgac
900

cgagcagtgg ctgaagacat tgtcattatt ctagtggatc ttttcaatga ccagtacttg
960

gaggacaatg tcacagcccc tgactatatg aaaaatgtcc ttgttctgac gctgtctcct
1020

gggaattccc ttctaaatag ctctttctcc aggaatctat caccaacaaa acgagacttt
1080

cgtcttgccct atttgaatgg aatcctcgtc tttggacata tgctgaagat atttcttgaa
1140

aatggagaaa atattaccac ccccaaattt gctcatgcct tcaggaatct cacttttgaa
1200

gggtatgacg gtccagtgac cttggatgac tgggggggatg ttgacagtac catgggtgctt
1260

ctgtatacct ctgtggacac caagaaatac aagggttcttt tgacctatga taccacgta
1320

aataagacct atcctgtgga tatgagcccc acattcactt ggaagaactc taaacttcct
1380

aatgatatta caggccgggg cctcagatc ctgatgattg cagtcttcac cctcactgga
1440

gctgtggtgc tgctcctgct cgtcgctctc ctgatgctca gaaaatatag aaaagattat
1500

gaacttcgtc agaaaaaatg gtcccacatt cctcctgaaa atatctttcc tctggagacc
1560

aatgagacca atcatgttag cctcaagatc gatgatgaca aaagacgaga tacaatccag
1620

agactacgac agtgcaaata cgtcaaaaag cgagtgattc tcaaagatct caagcacaat
1680

gatggtaatt tcaactgaaaa acagaagata gaattgaaca agttgcttca gattgactat
1740

tacaccctaa ccaagttcta cgggacagtg aaactggata ccatgatctt cggggtgata
1800

gaatactgtg agagaggatc cctccgggaa gttttaaatg acacaatttc ctaccctgat
1860

ggcacattca tggattggga gtttaagatc tctgtcttgt atgacattgc taagggaatg
1920

tcatatctgc actccagtaa gacagaagtc catggtcgtc tgaaatctac caactgcgta
1980

gtggacagta gaatggtggt gaagatcact gattttggct gcaattccat tttgcctcca
2040

aaaaaggacc tgtggacagc tccagagcac ctccgccaag ccaacatctc tcagaaagga
2100

gatgtgtaca gctatgggat catcgcacag gagatcattc tgcggaaaga aaccttctac
2160

actttgagct gtcgggaccg gaatgagaag attttcagag tggaaaattc caatggaatg
2220

aaacccttcc gccagattt attcttgga acagcagagg aaaaagagct agaagtgtac
2280

ctacttgtaa aaaactgttg ggaggaagat ccagaaaaga gaccagattt caaaaaaatt
2340

gagactacac ttgccaagat atttggactt tttcatgacc aaaaaaatga aagctatatg
2400

gataccttga tccgacgtct acagctatat tctcgaaacc tggaacatct ggtagaggaa
2460

aggacacagc tgtacaaggc agagaggac agggctgaca gacttaactt tatgttgctt
2520

ccaaggctag tggtaaagtc tctgaaggag aaaggctttg tggagccgga actatatgag
2580

gaagttacaa tctacttcag tgacattgta ggtttcacta ctatctgcaa atacagcacc
2640

cccatggaag tggaggacat gcttaatgac atctataaga gttttgacca cattgttgat
2700

catcatgatg tctacaaggt ggaaaccatc ggtgatgcgt acatggtggc tagtggtttg
2760

cctaagagaa atggcaatcg gcatgcaata gacattgcca agatggcctt ggaaatcctc
2820

agcttcatgg ggacctttga gctggagcat cttcctggcc tcccaatatg gattcgcatt
2880

ggagttcact ctggtccctg tgctgctgga gttgtgggaa tcaagatgcc tcgttattgt

2940

ctatttgag atacgggtcaa cacagcctct aggatggaat ccactggcct ccctttgaga
3000

attcacgtga gtggctccac catagccatc ctgaagagaa ctgagtgcc gttcctttat
3060

gaagtgagag gagaaacata cttaaaggga agaggaaatg agactaccta ctggctgact
3120

gggatgaagg accagaaatt caacctgcc acccctccta ctgtggagaa tcaacagcgt
3180

ttgcaagcag aattttcaga catgattgcc aactctttac agaaaagaca ggcagcaggg
3240

ataagaagcc aaaaaccag acgggtagcc agctataaaa aaggcactct ggaatacttg
3300

cagctgaata ccacagacaa ggagagcacc tattttttaa cctaaatgag gtataaggac
3360

tcacacaaat taaaatacag ctgcactgag gccaggcacc ctcaggtgtc ctgaaagctt
3420

actttcctga gacctcatga ggcagaaatg tcttaggctt ggctgccctg tttggaccat
3480

ggactttctt tgcataaacc agatgtgttc tcagtgaat aactaccttc cactctggaa
3540

ccttattcca gcagttgttc caggagctt ctacctggaa aagaaaagaa tttcatttat
3600

tttttgtttg tttattttta tcgtttttgt ttactggctt tccttctgta ttcataagat
3660

tttttaaatt gtcataatta tatttttaaatt acccatcttc attaaagtat atttaactca
3720

taatttttgc agaaaatatg ctatatatta ggcaagaata aaagctaaag gtttcccaaa
3780

aaaaaaa
3787